

Inventors: Michael C. Sefcik
Robert F. Veldman
Docket No.: 25434-00077

CLAIMS

Having thus described the invention, I claim:

1. A clutch, comprising:
 - a clutch housing having a predetermined shape;
 - a piston positioned within the clutch housing; and
 - a sleeve having a predetermined shape substantially conforming to the predetermined shape of the clutch housing, the sleeve being positioned within the clutch housing forming a fluid passageway between the clutch housing and the sleeve and forming a piston reactive cavity between the clutch housing, the piston, and the sleeve.
2. The clutch of claim 1, wherein the sleeve is sealingly engaged with the clutch housing by an interference fit between the sleeve and the clutch housing.
3. The clutch of claim 1, wherein the predetermined shape of the sleeve has a first portion, a first stepped portion, and a second stepped portion.
4. The clutch of claim 1, wherein the clutch housing further includes a fluid entry passage therein such that during operation of the clutch fluid travels into the fluid entry passage and through the fluid passageway and into the piston reactive cavity.

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5. The clutch of claim 1, wherein the sleeve is made from a powdered metal material.
6. The clutch of claim 5, wherein the powdered metal material is sintered iron.
7. The clutch of claim 1, wherein the sleeve has a sealing surface thereon in sealing engagement with the piston so that the piston substantially seals the piston reactive cavity.
8. The clutch of claim 1, further comprising a centrifugal compensation device positioned within the clutch housing wherein the sleeve has a centrifugal retaining device therein to retain the centrifugal compensation device within the clutch housing.
9. A clutch, comprising:
 - a clutch housing;
 - a piston positioned within the clutch housing; and
 - a sleeve having a stepped portion, the sleeve being positioned within the clutch housing such that a fluid passageway is formed between the clutch housing and the sleeve and such that the piston is in sealing engagement with the stepped portion of the sleeve forming a piston reactive cavity between the clutch housing, the piston, and the sleeve.

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10. The clutch of claim 9, wherein the clutch housing further includes a fluid entry passage therein such that during operation of the clutch fluid travels into the fluid entry passage and through the fluid passageway and into the piston reactive cavity.

11. A method of assembling a clutch, the method comprising:
providing a clutch housing having a predetermined shape;
attaching a piston within said clutch housing;
providing a sleeve having a shape substantially conforming to the predetermined shape of the clutch housing; and
positioning the sleeve within said clutch housing such that a fluid passageway is formed between the clutch housing and the sleeve and such that a piston reactive cavity is formed between the clutch housing, the piston, and the sleeve.

12. The method of claim 11, further comprising creating a fluid entry passage in the clutch housing so that during operation of the clutch fluid travels into the fluid entry passage and through the fluid passageway and into the piston reactive cavity.

13. The method of claim 11, further comprising:
providing a sealing surface on the sleeve; and
positioning the piston in sealing engagement with the sealing surface of the sleeve substantially sealing the piston reactive cavity.

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14. The method of claim 11, wherein the sleeve is made from a powdered metal material.

15. The method of claim 14, wherein the powdered metal material is sintered iron.

16. A method of assembling a clutch, the method comprising:

providing a clutch housing;

attaching a piston within the clutch housing;

providing a sleeve having at least one stepped portion, the stepped portion having a sealing surface thereon;

positioning the sleeve within the clutch housing such that a fluid passageway is formed between the clutch housing; and

forming a seal between the piston and the sealing surface on the sleeve so as to form a piston reactive cavity between the clutch housing, the piston, and the sleeve.

17. The method of claim 16, further comprising creating a fluid entry passage in the clutch housing so that during operation of the clutch fluid travels into the fluid entry passage and through the fluid passageway and into the piston reactive cavity.